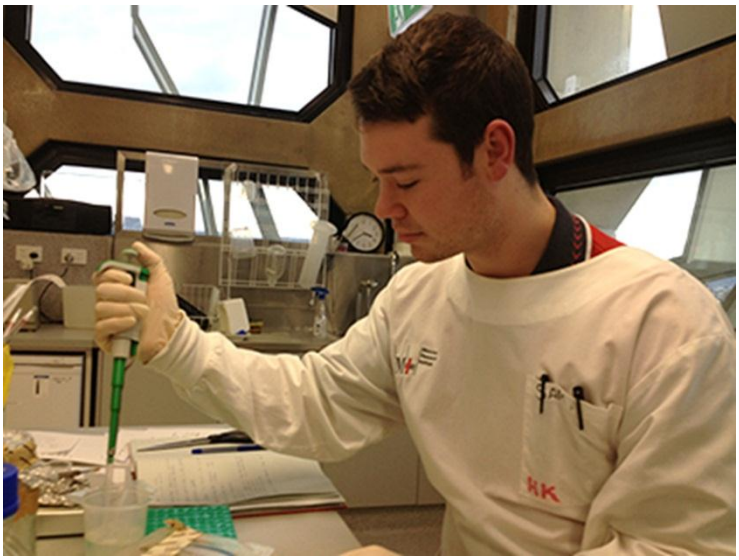
Sam Hogarth

Neuroscientist



The brain is an incredibly complex and highly interconnected organ. It is the powerhouse of the body and carries out a variety of tasks from storing memories to processing huge amounts of information and monitoring vital organs. I study the brain- I am a neuroscientist.

I went to a rural primary and secondary high school in Dover, Tasmania before moving into a share house to attend Hobart College for year 11 and 12. I have always enjoyed maths and science but I believe my inquisitive nature is what drew me to studying the brain and its incredible complexity. I attended the University of Tasmania for 3 years and last year I obtained a degree in Biotechnology and Medical research. I am currently completing my honours year, and my research focuses on neuronal connectivity.

Our brains are composed of a countless number of neurons, which are cells that carry information throughout the brain, through the spinal cord and into the periphery of our bodies. Information in the brain travels as electric signals from the centre of neurons (the nucleus), along a thin section of the cell called the axon and finally into the ends of the neuron, which we call dendrites. The speed that this information travels is vital to the efficiency of our brains to carry out tasks and make decisions. The speed of information processing can be increased by another type of cell in the brain called oligodendrocytes. These cells wrap a substance called myelin around and around the neuronal axon forming an internode. Myelin is a special membrane that causes the electrical signalling in neurons to skip over sections of the axon and go faster (a bit like the Mexican wave with big gaps in the crowd). I am working on the cells that make oligodendrocytes and how they are able to recognise neurons in the brain. This work is very important because it is still unknown why some neurons get myelinated while others remain untouched.

I would recommend science to anyone who is inquisitive like me and who enjoys discovering new concepts and ideas. If you are passionate about your work, it becomes highly enjoyable and rewarding.

For more information: www.menzies.utas.edu.au

www.YoungTassieScientists.com